Topics:

Bluetooth [1]

SO-06-004 Bluetooth

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PURPOSE

To define 802.15ii standards for agencies to use in deployment of wireless technology.

INDUSTRY STANDARD

This standard applies to the use of wireless technologies deployed on an agencies? wireless personal area network. The dominant standards to date have been the 802 standards series developed by the Institute of Electrical and Electronic Engineers (IEEE). Any use of wireless strategy should comply with the most current version of the IEEE 802.15 standard. The current version of 802.15 can be found at http://grouper.ieee.org/groups/802/15/ [2]. To further standardize the use and deployment of 802.15 in the State of Georgia?s environment, the following areas are clarified in this policy adoption: establishing a net, link encryption, degradation and coexistence.

Although many government entities have already started using wireless technology, the intent of this document is to outline areas that need to be reviewed and explain areas that need to be considered on initial deployment.

The following standards are in commercial, office and industrial use: IEEE?s 802.15.1, 802.15.2, 802.15.3 and 802.15.4. These standards will serve as the de facto Wireless Personal Area Network standards for the State. Whenever deploying a WPAN solution, agencies must insure vendors meet these standards. A summary of the standards and a comparative table are below. This document will be updated as applicable standards are ratified by IEEE.

DESCRIPTIONS OF IEEE 802 STANDARDS

802.15.1 & 802.15.1a - Bluetooth (or WPAN) - Bluetooth wireless technology operates in the 2.4-gigahertz (GHz) Industrial, Scientific and Medical (ISM) band (from 2.4 to 2.4835 GHz), dividing this frequency range into 79 1-megahertz (MHz) subchannels and hopping from channel to channel 1,600 times per second. Transmitting and receiving devices must synchronize on the same hop sequence to communicate. The technology has a maximum theoretical data rate of 1 Mbps. Actual maximum throughput is approximately 400?700 Kbps, depending on the channel configuration.

Bluetooth links are short range, designed to link personal electronics devices that are fairly close together? typically no more than 10 meters (or approximately 30 feet). Unlike Infrared Data Association (IrDA) devices, a Bluetooth link does not require that the devices be lined up precisely within line-of-sight of each other. Bluetooth wireless technology may offer more flexibility than the IrDA ports on portable computers, mobile phones, and PDAs.

Bluetooth is designed for cable replacement in a short-range, personal area network. Bluetooth eliminates cabling between electronic products and accessories and is more oriented toward user mobility and eliminating short distance cabling. Bluetooth users with handhelds or laptops can exchange files, business cards and calendar appointments.

802.15.1a incorporates changes to 802.15.1 based on Bluetooth version 1.2